New Survey Method Furthers Band-tailed Pigeon Management

by Pat Lauridson

The band-tailed pigeon is the only native pigeon species in the Western United States and Canada. Its range within the United States includes portions of California, Nevada, Oregon, Washington, Utah, Colorado, Arizona, and New Mexico. Although generally similar in size and stance, it can be distinguished from the introduced feral pigeon, or rock dove, by its generally darker plumage, sleeker body, and longer tail feathers which contain a dark colored band at the base. The two species also typically occupy dissimilar habitats, especially in California, with feral pigeons preferring more urban or agricultural environments and band-tails typically avoiding them for the wild coniferous and hardwood forests of California's coastal and Sierra Nevada mountain ranges.

The band-tail is primarily migratory and can fly over 1,800 kilometers one way during its annual north-south seasonal migration. Two distinct subpopulations, or races, of band-tailed pigeons are recognized by ornithologists based upon their differing migration patterns and only rare interchange of individuals. The Interior Region subpopulation occupies various portions of the southwest's four-corner states. The Pacific Coast subpopulation ranges geographically from lower British Columbia to the northern portions of Baja Mexico. California's montane habitats serve as both breeding and wintering range for the Pacific Coast band-tail with breeding taking place statewide and wintering occurring primarily south of Sacramento.

The band-tailed pigeon is considered a game species in each state it occupies, including California. However, due to its migratory nature, harvest management oversight for the band-tail falls under federal jurisdiction. Accordingly, with scientific input and recommendations from California and the other states, the U.S. Fish and Wildlife Service (USFWS) annually sets harvest frameworks for the band-tailed pigeon, as

Band-tailed pigeons are one of California's migratory game birds. DFG file photo.

well as other migratory bird species. The states are then allowed to designate their own seasons and bag limits within these criteria. Historically, California has relied upon four data sources to formulate harvest regulation recommendations: 1) trends in the pigeon population in California as described by the National Breeding Bird Survey; 2) specific pigeon surveys in OR and WA; 3) harvest estimates generated by the Department's annual Game Take Hunter Survey; and, 4) estimates of recruitment of young birds into the population resulting from an annual wingbee (see article at right). Beginning next year however, trend data from a newly developed census survey will add an additional dynamic to the recommendation process.

Over the past few decades, the Pacific Coast states have employed differing survey methods to determine the relative health and size of the band-tailed pigeon population. These methods included National Breeding Bird Survey routes, state call-count surveys, and water/mineral site point surveys. In 1998, a study was initiated by the U.S. Geological Survey (USGS), in cooperation with the USFWS, Washington Department of Fish and Wildlife, Oregon State University, Canadian Wildlife Service, and California Department of Fish and Game (DFG), to determine which of the existing survey methods produces the most reliable and accurate depiction of short-term (3-5 years) band-tail population changes. Study results revealed that, in contrast to Breeding Bird Survey routes and call-count surveys, mineral site counts were more likely to be effective at determining short-term trends in the breeding population.

With results of their prior study in hand, in 2001 the USGS initiated a follow-up study to develop a standardized, inter-state population survey methodology which would ideally produce a reliable band-tailed pigeon breeding population index and reveal any short-term population changes. Funded by the Webless Migratory Game Bird Research Program (USFWS), Washington Department of Fish and Wildlife, Oregon Department of Fish and Game, Oregon State University, and DFG, this study entailed stationing four field biologists at key sites along the Pacific Coast and having them conduct mineral site bird counts and collect habitat

Migratory bird specialists have gathered for the last 14 years to examine wings submitted by band-tailed pigeon hunters from across the western United States. By carefully observing certain traits in the wings, including feather color, molt and replacement, and wear, scientists can determine if the bird was a juvenile or adult when it was harvested. This information provides valuable insight concerning the recruitment of young birds into the adult population the prior year. Recruitment, in turn, is a key factor in the assessment of population health.

In May of this year, biologists representing the two band-tailed pigeon subpopulations gathered in Lakewood, Colorado to conduct the 2005 band-tailed pigeon wing bee. Over a four hour period, these migratory bird specialists examined over 250 wings and recorded age and molt data for each. These data will be further analyzed in the coming months to determine hatch date distribution and recruitment percentages. This information will then be combined with other population assessment data to formulate next year's harvest recommendations through the Pacific Flyway Study Committee and Council.

Western biologists will join together yet again next spring for the annual band-tail wing bee. If you receive envelopes and a request to submit wings this year, please assist us in our efforts to assure band-tail population health by sending in one wing from each bird you shoot. Or, if you harvest band-tailed pigeons annually and have not been asked to submit wings (but would like to), please contact the DFG at (916) 445-3406 for information on how to participate.

Photo, above: Federal, state, and retired wildlife professionals gathered in Lakewood, Colorado in May to conduct the annual Pacific Flyway band-tailed pigeon wingbee. Shown from left to right are: Pat Lauridson (DFG); Dr. Clait Braun (Colorado Division of Wildlife, retired); David Dolton (USFWS); and Steve Inzalaco, Michelle Gosz, and Dr. Todd Sanders (Colorado Division of Wildlife). ***Photo provided by*** *David Dolton.*

The types of mineral sites used by band-tailed pigeons vary dramatically. The survey site above was located near Lake Tahoe and consisted of an equipment yard where band-tails would pick-up salt and sand to supplement their nutritional needs. Photo by Pat Lauridson. Other survey sites, such as the one pictured on the right, were far off the beaten path in dense forested areas where mineral springs and creeks provided these resources. ***Photo by U.S. Geological Survey.***

data at 20 different sites on a weekly basis. This effort continued from June through September in 2001 and 2002. Analysis of the resulting data revealed the most productive mineral sites for conducting census techniques, as well as determining that early morning surveys during the first two weeks of July would offer the best potential to detect short-term population changes.

Armed with this new information, wildlife biologists from British Columbia, Washington, Oregon, and California coordinated their efforts through the Pacific Flyway Study Committee and made plans to implement the new method the following year. As a result, standardized, range-wide Pacific Coast band-tailed pigeon data collection occurred for the first time in 2004. In California, eight DFG wildlife biologists representing two regions and headquarters surveyed 14 known mineral sites in Northern California. These sites ranged in habitat type from asphalt-covered equipment yards to deep-woods, pristine mineral springs rarely observed by man. Data collection began a half-hour before sunrise and continued until noon. Every 30 minutes the number of band-tails that had arrived and departed since the last record was documented. At the end of the daily study period, results were tabulated to generate a site-specific census record. These records were then combined to form a statewide population index for the year and forwarded to federal personnel for further analysis.

With one year of coordinated efforts and data under their belts, state and provincial wildlife personnel throughout the Pacific Coast are poised to visit their respective mineral sites again this summer. In early July, a total of 42 mineral sites will be visited within the Pacific Coast band-tailed pigeon's range, including 15 located in California. The resulting data will be submitted to the USFWS for compilation, analysis, and interpretation. As yearly data sets are accumulated and combined, population trend data will begin to emerge. These results, in turn, should prove highly valuable when making band-tail management decisions, including setting the annual harvest regulations.